FLOOD MONITORING AND ALERT SYSTEM (MINDEF)

Compact. Durable. Ready for Remote Deployment

Optional Selection:

- 20W Solar Panel
- 40W Solar Panel

Adjustable solar panel bracket with installed solar panel. Tilted at 15° to ensure maximum sunlight exposure and to prevent stagnant water

Optional Selection:

- ABS Enclosure
- Steel Enclosure
- IP68 Enclosure
- Ex-Proof Enclosure

IP65 outdoor enclosure to protect internal components from weather condition.

Optional Selection:

- Stainless Steel Stand
- Steel Stand
- Bolted Base
- Concrete Base

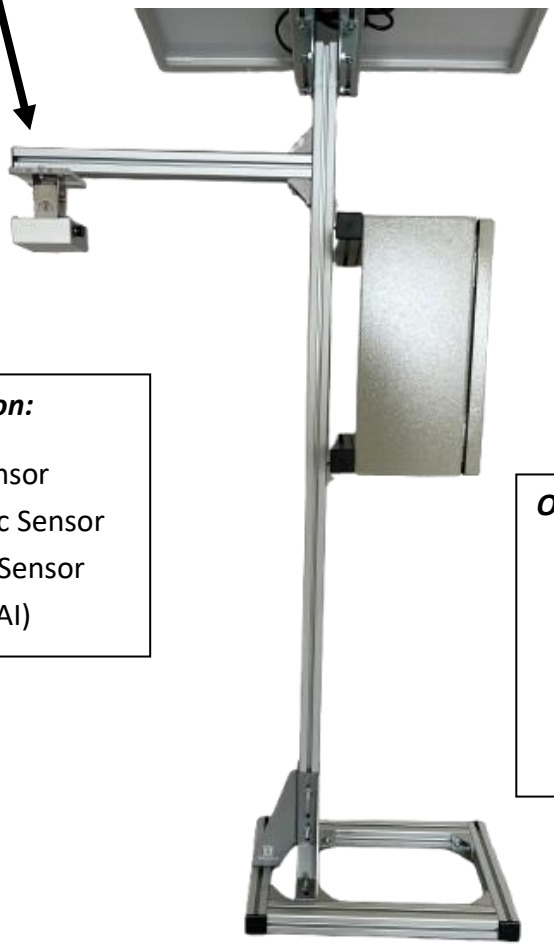
Aluminium structure to reduce reflection in Air Base which can hinder pilot sight. Aluminium material also ensures no corrosion.

Figure 1: Flood Monitoring Station (Front View)

MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · **(+65) 9010 8859**

Radar Sensor (80 GHz)

- Detect Zone: 0 to 40m
- Small Emitting Radius
- Fast Response Rate
- Low Power Consumption



Optional Selection:

- Radar Sensor
- Ultrasonic Sensor
- Pressure Sensor
- Camera (AI)

Optional Selection:

- RS485 Modbus
- RS232 Serial
- 4-20mA
- 0-5V
- SDI-12

Figure 2: Flood Monitoring System (Side View)

MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · **(+65) 9010 8859**

Solar Charger, control the power supply of the system by regulating the energy from solar panel to the system and battery.

Optional Selection:

- PWM Type
- MPPT Type

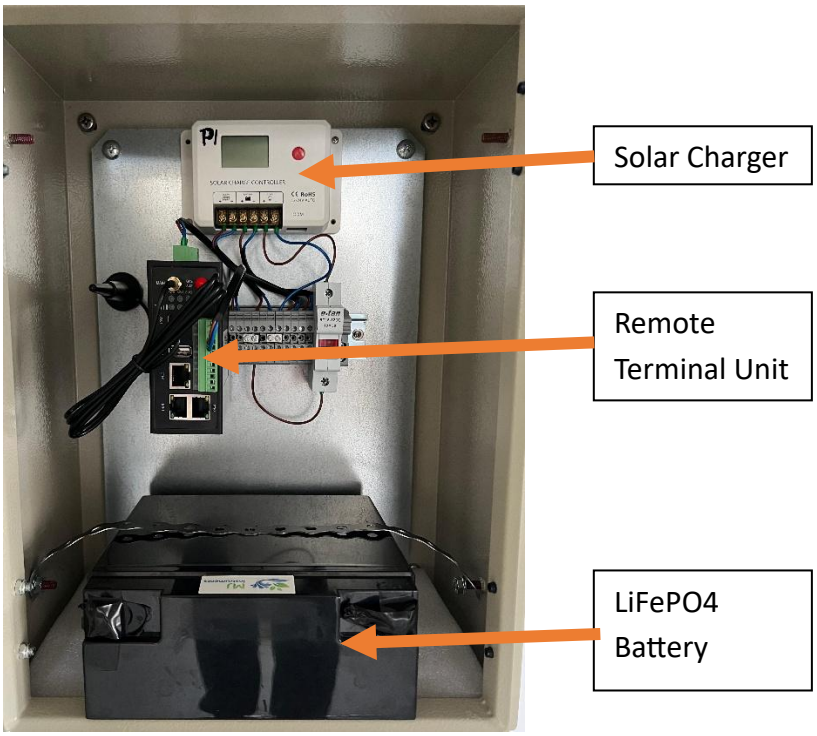


Figure 3: Inside Enclosure

LiFePO4 Battery, power the system during days without sunlight or at night. Act as a storage for energy. Although at higher cost, it offers much better safety than other type of batteries.

Optional Selection:

- 10Ah
- 20Ah
- 30Ah
- 40Ah
- 50Ah

MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · (+65) 9010 8859

Remote Terminal Unit (RTU) Core Functions

Data Acquisition

Reads real-time data from connected sensors, transducers, and meters (e.g. temperature, pressure, flow, voltage).

Data Processing and Storage

Processes input locally and store historical data for offline access or retransmission.

Data Transmission

Sends collected data to a central system (e.g. SCADA or cloud platform).

Remote Control

Accepts control commands to activate relays, switches, pumps, etc.

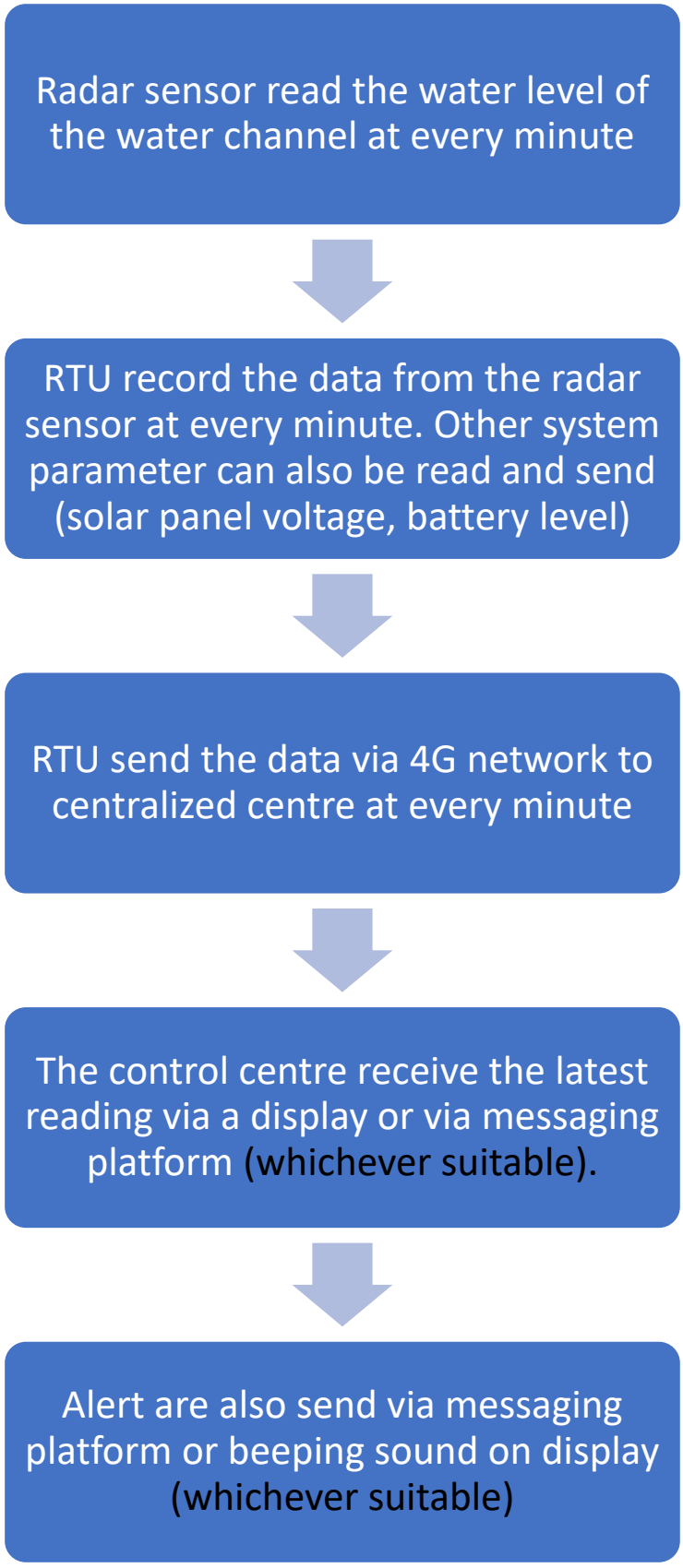
Remote Terminal Unit (RTU) Optional Signal Input:

- RS485 / RS232 Modbus
- 4-20mA / 0-5v
- SDI-12

Remote Terminal Unit (RTU) Optional Data Transmission:

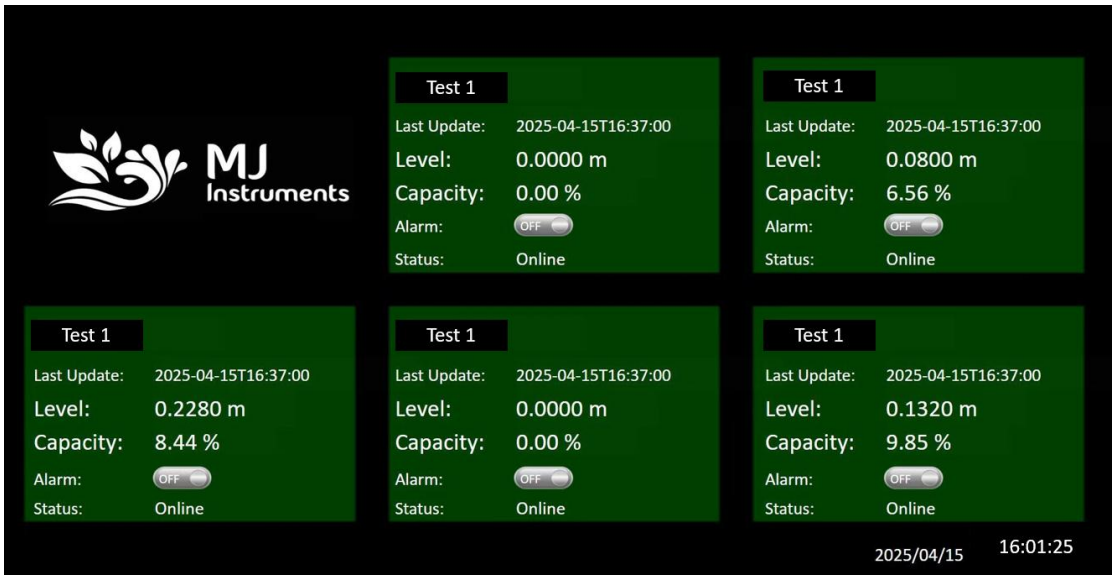
- 3G/4G/5G
- NB-IoT
- LTE Cat M1
- LoRa / LoRaWAN
- Satellite
- Ethernet / LAN / Wi-Fi
- RS232 / RS485

Working Principle of Overall System



MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · (+65) 9010 8859

Example of HMI



** Water level is displayed as % of the maximum height of the water channel. This allow the operator to easily read if the water channel is flooded. This can shorten the time for follow up action.

MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · **(+65) 9010 8859**

About MJ INSTRUMENTS PTE LTD

- ***Manufacturer*** of water quality and quantity analyzer and sensor
    - Chemical
    - Nutrients
    - Toxicity
    - Heavy Metal
    - pH, Temperature, Dissolved Oxygen, Conductivity, Turbidity
    - Water Level and Flow Rate

- ***System integrator*** for environmental monitoring
    - Reservoir, Ocean, Groundwater, River, Channel
    - Drinking Water Treatment Plant, Waste Water Treatment Plant
    - Desalination Plant
    - Aquaculture
    - Air Quality
    - Water Quality
    - Water Quantity (level and flowrate)
    - Oil Leaks / Spillage
    - Control Pump / Valves / Gates
    - PLC / RTU / SCADA

MJ INSTRUMENTS PTE LTD
7 Gambas Crescent Ark@Gambas, #08-15, Singapore 757087
admin@mj-instruments.com · **(+65) 9010 8859**